

PATENT APPLN. NO. 10/659,399
RESPONSE UNDER 37 C.F.R. § 1.116

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IN THE CLAIMS:

1. (previously presented) An optical functional sheet comprising, at least within the sheet, light diffusing phases and transparent phases each extending in a direction perpendicular to the surface of the sheet, wherein the light diffusing phases and the transparent phases are alternately arranged along the sheet surface direction and wherein L/p in any cross section of the sheet is 2-10, where L is the length of a transparent phase in a direction of the film thickness of the sheet and p is the length of a transparent phase in a direction along the sheet surface and, when the width of the transparent phase varies in the direction of the thickness of the sheet, p is the shorter of the length in the upper most portion and the length in the lower most portion of the sheet.

2. (currently amended) An optical functional sheet comprising, at least within the sheet, light diffusing phases and transparent phases each extending in a direction perpendicular to the surface of the sheet, wherein the light diffusing phases are arranged in a form of a continuous phase in which the light diffusing phases are mutually coupled in a direction along the sheet surface, and the transparent phases are arranged in a form of

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discontinuous phases in which the transparent phases are decoupled by the light diffusing phases, and wherein L/p in any cross section of the sheet is 2-10, where L is the length of a transparent phase in a direction of the film thickness of the sheet and p is the length of a transparent phase in a direction along the sheet surface and, when the width of the transparent phase varies in the direction of the thickness of the sheet, p is the shorter of the length in the upper most portion and the length in the lower most portion of the sheet.

3. (original) The optical functional sheet according to claim 1, wherein the shape of a projected image of a transparent phase onto the sheet surface is selected from the group consisting of a trigon, tetragon, hexagon, circle and ellipsoid.

4. (original) The optical functional sheet according to claim 2, wherein the shape of a projected image of a transparent phase onto the sheet surface is selected from the group consisting of a trigon, tetragon, hexagon, circle and ellipsoid.

5. (original) The optical functional sheet according to claim 1, wherein a light diffusing phase is a transparent matrix

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component, in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.

6. (original) The optical functional sheet according to claim 2, wherein a light diffusing phase is a transparent matrix component, in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.

7. (original) The optical functional sheet according to claim 1, wherein the light diffusing phases contain a number of bubbles, and the transparent phases do not contain bubbles.

8. (original) The optical functional sheet according to claim 2, wherein the light diffusing phases contain a number of bubbles, and the transparent phases do not contain bubbles.

9-10. (cancelled)

11. (original) The optical functional sheet according to claim 1, wherein the shapes of the cross sections of the light diffusing phases and the transparent phases in a direction normal to the sheet surface are selected from the group consisting of

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rectangle, square, parallelogram, trapezoid, trigon, campanulate or bell shape, horn shape, ellipsoid, and combinations thereof.

12. (original) The optical functional sheet according to claim 2, wherein the shapes of the cross sections of the light diffusing phases and the transparent phases in a direction normal to the sheet surface are selected from the group consisting of rectangle, square, parallelogram, trapezoid, trigon, campanulate or bell shape, horn shape, ellipsoid, and combinations thereof.

13. (original) The optical functional sheet according to claim 1, wherein a ratio of the length L' of a light diffusing phase in a direction of the film thickness of the sheet to the length q of a light diffusing phase in a direction along the sheet surface (L'/q), in any cross section of the sheet, is not less than 1.

14. (original) The optical functional sheet according to claim 2, wherein a ratio of the length L' of a light diffusing phase in a direction of the film thickness of the sheet to the length q of a light diffusing phase in a direction along the sheet

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surface (L'/q), in any cross section of the sheet, is not less than 1.

15. (original) The optical functional sheet according to claim 1, wherein an area ratio of area of the light diffusing phases to area of the transparent phases within the surface of the sheet is $1/50 - 1/1$.

16. (original) The optical functional sheet according to claim 2, wherein an area ratio of area of the light diffusing phases to area of the transparent phases within the surface of the sheet is $1/50 - 1/1$.

17. (original) The optical functional sheet according to claim 1, wherein the film thickness is $10 - 500 \mu\text{m}$.

18. (original) The optical functional sheet according to claim 2, wherein the film thickness is $10 - 500 \mu\text{m}$.

19. (original) A combined optical functional sheet comprising (1) an optical functional sheet according to claim 1 and (2) another optical functional sheet.

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20. (original) A combined optical functional sheet comprising (1) an optical functional sheet according to claim 2 and (2) another optical functional sheet.

21. (original) The combined optical functional sheet according to claim 19, wherein the another optical functional sheet (2) is a light diffusive sheet comprising a transparent matrix component in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.

22. (original) The combined optical functional sheet according to claim 20, wherein the another optical functional sheet (2) is a light diffusive sheet comprising a transparent matrix component in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.

23. (original) A backlight for a liquid crystal display comprising an optical functional sheet according to claim 1 and a light guiding plate.

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24. (original) A backlight for a liquid crystal display comprising an optical functional sheet according to claim 2 and a light guiding plate.

25. (previously presented) A backlight for a liquid crystal display comprising an optical function sheet according to claim 1, a light diffusive sheet and a light guiding plate in this order, wherein the light diffusive sheet comprises a transparent matrix component in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.

26. (previously presented) A backlight for a liquid crystal display comprising an optical functional sheet according to claim 2, a light diffusive sheet and a light guiding plate in this order, wherein the light diffusive sheet comprises a transparent matrix component in which fine particulate matter having a different refractive index from that of the matrix component is dispersed.